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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,068	06/16/2005	Christophe Loustaudaudine	V3.12-1	3636

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3356 SHERMAN CT. STE. 102
EAGAN, MN 55121

EXAMINER	
HAYES, KRISTEN C	
ART UNIT	PAPER NUMBER
3643	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,068	LOUSTAUDAUDINE ET AL.	
	Examiner	Art Unit	
	Kristen C. Hayes	3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is not known how the balloon pivots relative to the chassis. The structure, location and function of the pivot are not known.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. From the language of the claim it is unclear if the mechanical connection or the at least one balloon is approximately parallel to the longitudinal axis of the aircraft.

6. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. From the wording of the claim it is unclear whether the elastic means is a part of the connecting means or if it is an additional element. Also, use of "balloon(s)" in lines 3-4 makes it unclear as to whether the applicant claims one or multiple balloons.

7. Claims 9-11 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear whether the applicant is further limiting the positioning of the balloons previously claimed or if two additional balloons are being claimed.

8. Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to which balloons the applicant is referring to.

9. Claims 6 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 6 recites the limitation "the volume" in line 2. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 24 recites the limitation "the aft" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 5-12, 19-20, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Hodgson US Patent 5,857,645.

14. Regarding claim 1, Hodgson discloses a lighter than air aircraft comprised of two balloons (25) that are connected by a connecting means (2, 3, 4, 21) forming a chassis, connecting at least one of the balloons through a mechanical connection (Hodgson, column 3: lines 5-6) that is articulated about an axis parallel (Hodgson, column 5: line 6) to the longitudinal axis of the aircraft enabling the at least one connected balloon to pivot relative to the chassis (Hodgson, column 3: lines 6-9)

15. Regarding claim 5, Hodgson discloses an aircraft with the limitations of claim 1 further comprising a carrying means (14, 38) designed to support equipment and or at least one person (Hodgson, column 5: lines 38-42).

16. Regarding claim 6, Hodgson discloses an aircraft with the limitations of claim 5 further characterized by carrying means lying within the volume between the balloons (Hodgson, column 5: lines 6-7)

17. Regarding claim 7, Hodgson discloses an aircraft with the limitations of claim 1 further characterized by the connecting means forms a symmetric assembly (Hodgson, Figures: 3, 5).

18. Regarding claim 8, Hodgson discloses an aircraft with the limitations of claim 1 further characterized with a balloon on each side of the connecting means (Hodgson, Figure: 3)

19. Regarding claim 9, Hodgson discloses an aircraft with the limitations of claim 1 further characterized with two balloons on each side of the connecting means (Hodgson, Figures: 1, 3).

20. Regarding claim 10, Hodgson discloses an aircraft with the limitations of claim 9 further characterized by the balloons lying in an approximately horizontal plane (as best understood)(Hodgson, Figure: 2).

21. Regarding claim 11, Hodgson discloses an aircraft with the limitations of claim 9, further characterized by the two balloons being placed one above the other (Hodgson, Figure: 1)

22. Regarding claims 12 and 20, Hodgson discloses an aircraft with the limitations of claim 1 further characterized in that it comprises a means of propulsion and means of displacing the aircraft laterally (Hodgson, column 2: lines 55-59).

23. Regarding claim 19, with reference to Figure 4 Smith discloses an aircraft with the limitations of claims 1, further comprising stability control means (Hodgson, column 6: lines 14-16) that act on the altitude of the aircraft.

24. Regarding claim 22, Hodgson discloses an aircraft with the limitations of claim 1 further characterized in that it comprises directional means (Hodgson, column 2: lines 55-59). Because the propulsion means are manually operated, the user would also control the directional means. The grapple would be thrown in the desired direction and the aircraft would be winched in towards the grapple.

25. Regarding claim 31, Hodgson discloses a lighter than air aircraft with the limitations of claim 1 further comprising communication means (Hodgson, column 3: lines 40-42).

26. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Queck DD111185.

27. Regarding claim 2, Queck discloses a lighter than air aircraft that comprises at least two balloons (1) connected together by connecting means forming a chassis (6) with the connecting means being connected to the balloons through an electromagnetic type connection (3) (Queck, claim 1). Queck discloses conventional coupling devices such as the mechanical, magnetic, electrical or pneumatic type, or combinations

thereof. The combination of magnetic and electrical coupling devices is considered to read on the claim.

28. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins et al 1,291,687.

29. Regarding claim 4, Jenkins et al discloses a lighter than air aircraft characterized in that it comprises at least two balloons (11) connected together by connecting means forming a chassis (19), wherein the balloon on one side of the connecting means is connected to the balloon on the other side of the connecting means by elastic means (16). A cable has elasticity. Therefore, the cables connecting the balloons are considered elastic means.

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

31. Claims 1, 12-15, 21-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silver US Patent 1,608,822 in view of Hodgson US Patent 5,857,645.

32. Regarding claim 1, Silver discloses a lighter than air aircraft comprised of two balloons (1) and (2) that are connected by a means forming a chassis (page 1, lines 9-

11), a connecting means formed by (10), (11), (12), (13), (14), (15), (16), and (17) connecting at least one of the balloons through a mechanical connection (Silver, page 2: lines 12-14) that is articulated about an axis parallel to the longitudinal axis of the aircraft (Silver, page 1: lines 96- 97)(as best understood). Silver does not disclose the at least one connected balloon pivoted relative to the chassis. However, Hodgson teaches a balloon (25) that pivots relative to the chassis (Hodgson, column 3: lines 6-9). The balloon being able to pivot relative to the chassis would allow for the aircraft to form different configurations. If desired, the aircraft could configure to form a slimmer profile to allow it to move through tight spaces. Or, the balloons could pivot and become streamlined, which would reduce drag on the aircraft. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aircraft of Silver with the pivoting balloon of Hodgson to allow the aircraft to form different configurations.

33. Regarding claim 12, Silver discloses an aircraft with the limitations of claim 1 further characterized in that it comprises a means of propulsion or controlling the stability of the aircraft (Silver, page 2: lines 85-86). "The means I have provided for the propelling of the ship, consists of four engines..."

34. Regarding claim 13, Silver discloses an aircraft with the limitations of claim further characterized by an engine (40, 60) that produces a thrust along the longitudinal axis of the aircraft (Silver, page 2: lines 92-95, page 3: lines 13-16) and is located near the center of gravity (Silver, page 2: lines 86-89). Silver discloses four engines "Each of these engines... is mounted on a horizontally rotatable turret..." (Silver, page 2: lines

92-95). These engines are then able to rotate to produce a thrust along the longitudinal axis of the aircraft. The engines are near but not at the centre of gravity. However, Silver suggests placing the engines close to the center of the ship and thereby the centre of gravity (Silver, page 2: lines 90-91). Retaining the weight of the engines near the center of gravity, which would provide stability for the aircraft.

35. Regarding claim 14, Silver discloses an aircraft with the limitations of claim 12 further characterized by a pitch control means (60). Opposite thrusts of the pitch control means can vary the pitch of the aircraft.

36. Regarding claim 15, with reference to Figure 4, Silver discloses an aircraft with the limitations of claim 14 further characterized in that the pitch control means include at least two engines (60) installed approximately on the longitudinal axis of the aircraft, on forward and one after the center of gravity of the aircraft.

37. Regarding claim 21, Silver discloses an aircraft with the limitations of claim 20 further characterized in that the lateral displacement means comprise at least two lateral engines capable of producing thrusts in opposite directions along a horizontal axis perpendicular to the longitudinal axis of the aircraft near the center of gravity (Silver, page 2: lines 85-90). "Each of these engines... is mounted on a horizontally rotatable turret..." (Silver, page 2: lines 92-95). These engines located near the center of gravity of the aircraft are then able to rotate to produce thrusts in opposite directions along a horizontal axis. The engines are near but not at the centre of gravity. However, Silver suggests placing the engines close to the center of the ship and thereby the centre of

gravity (Silver, page 2: lines 90-91). Retaining the weight of the engines near the center of gravity, which would provide stability for the aircraft.

38. Regarding claim 22, Silver discloses an aircraft with the limitations of claim 1 further characterized in that it comprises directional means (Silver, page 2: lines 98-101, 126).

39. Regarding claim 23, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 1 further characterized in that the directional means comprise the control surface (50).

40. Regarding claim 24, Silver discloses an aircraft with the limitations of claim 23 further characterized in that it comprises at least one left control surface and at least one right control surface (Silver, page 2: lines 68-72). "These wings... could be equipped if desired with ailerons for assisting in navigating the ship."

41. Regarding claim 25, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 1 as discussed above, further characterized in that the aircraft comprises at least one vertical stabilizer (51).

42. Regarding claim 26, with reference to Figure 3, Silver discloses an aircraft with the limitations of claim 25 as discussed above, further characterized in that it comprises at least one control surface (50) (Silver, page 2: lines 68-71 and 126).

43. Regarding claim 27, with reference to Figures 3 and 5, Silver discloses an aircraft with the limitations of claim 22 as discussed above, further characterized in that the directional means comprise at least one orientation engine (40) installed so as to produce at least a thrust transverse to the longitudinal axis of the aircraft. "Each of these

engines... is mounted on a horizontally rotatable turret..." (Silver, page 2: lines 92-95). These engines are able to rotate to produce thrusts transverse to the longitudinal axis of the aircraft.

44. Regarding claim 28, with reference to Figure 4, Silver discloses an aircraft with the limitations of claim 22 further characterized in that the directional means comprise at least two orientation engines (40) mounted with respect to each other so as to produce thrusts in the opposite direction. "Each of these engines... is mounted on a horizontally rotatable turret..." (Silver, page 2: lines 92-95). These engines are able to rotate to produce thrusts in opposite directions.

45. Regarding claim 30, with reference to Figures 1 and 5, Silver discloses an aircraft with the limitations of claim as discussed above, further characterized in that the balloons (1), (2), (3), and (4) are approximately cylindrical in shape.

46. Claims 1, and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith US Patent 5,026,003 in view of Hodgson US Patent 5,857,645.

47. Regarding claim 1, with reference to Figure 5 Smith discloses an aircraft characterized in that it comprises at least two balloons (4, 6) connected together by connecting means forming a chassis (2), connecting at least one of the balloons through a mechanical connection (Smith, column 1: lines 64-66) that is articulated about an axis parallel to the longitudinal axis (x) of the aircraft. Smith does not disclose the at least one connected balloon pivoted relative to the chassis. However, Hodgson teaches a balloon (25) that pivots relative to the chassis (Hodgson, column 3: lines 6-9). The balloon being able to pivot relative to the chassis would allow for the aircraft to form

different configurations. If desired, the aircraft could configure to form a slimmer profile to allow it to move through tight spaces. Or, the balloons could pivot and become streamlined, which would reduce drag on the aircraft. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aircraft of Smith with the pivoting balloon of Hodgson to allow the aircraft to form different configurations.

48. Regarding claim 9, Smith discloses an aircraft with the limitations of claim 1 further characterized in that it comprises two balloons (4) and (6) on each side of the connecting means (as best understood).

49. Regarding claim 10, Smith discloses an aircraft with the limitations of claim 9 further characterized by the balloons (4) lying in an approximately horizontal plane (as best understood).

50. Regarding claim 11, Smith discloses and aircraft with the limitations of claim 9 further characterized in that the two balloons are placed one above the other (Smith, Figure: 5).

51. Regarding claim 16, with reference to Figure 5 Smith discloses an aircraft with the limitations of claim 11 further characterized in that it comprises roll control means (Smith, column 7: lines 4-8). "The motors 106... normally operate in a horizontal orientation, they may be rotated to a vertical orientation where all of the thrust derived from the motors 106 is exerted vertically..." Once in the vertical orientation, varying the differential thrust between the two engines controls the roll of the aircraft.

52. Regarding claim 17, Smith discloses an aircraft with the limitations of claim 16 further characterized in that the roll control means comprise at least two engines (106) installed on each side of the longitudinal axis of the aircraft in an approximately horizontal plane.

53. Regarding claim 18, Smith discloses an aircraft with the limitations of 16. Smith does not teach roll control means comprising roll control engines mounted on an axis perpendicular to the longitudinal axis of the said aircraft and passing through or close to the center of gravity of the aircraft. The roll control means (106) of this aircraft are located away from the center of gravity, as shown in Figure 3. Moving the roll control means closer to the center of the aircraft would centrally locate the mass of the aircraft. It is known by those of ordinary skill in the art that the position of the center of mass of an aircraft affects is stability. Therefore, to achieve more stability it would have been obvious to those of ordinary skill in the art at the time of the invention to relocate the mass, and by doing so relocate the roll control means, to a position on an axis perpendicular to the longitudinal axis of the aircraft passing through or close to the center of gravity of the aircraft.

54. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson US Patent 5,857,645 in view of McDermott US Patent 6,581,873.

55. Regarding claim 29, Hodgson discloses a lighter than air aircraft with the limitations of claim 1 as discussed above, but does not disclose it comprising remote control means. However, McDermott teaches an aircraft with the limitations of claim 1 as discussed above, further characterized in that it comprises a remote control means

(McDermott, column 3: lines 16-17). "...maneuverable by remote control through earth based transmissions." The remote control means would provide a way for the aircraft to be guided from a distance. If the aircraft was engaged in combat or another dangerous situations it could be used without risking the life of a pilot. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the aircraft of Hodgson with the remote control of McDermott so that the aircraft could be guided from a distance.

Response to Amendment

56. The amendment filed on 30 July 2007 has been entered into the record

Response to Arguments

57. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The indicated allowability of claims 2 and 4 has been reconsidered due to newly discovered reference(s). The allowability has been withdrawn and a second non-final action is being issued.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristen C. Hayes whose telephone number is 571-270-3093. The examiner can normally be reached on Monday-Thursday, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCH
25 September 2007

Peter Poon
Supervisory Patent Examiner
Art Unit 3643